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Abstract

We report results from three well-known experimental paradigms, where we use time, rather than money, as the salient component of subjects' incentives. The three experiments, commonly employed to study social preferences, are the dictator game, the ultimatum game and the trust game. All subjects in a session earn the same participation fee, but their choices affect the time at which they are permitted to leave the laboratory, with decisions typically associated with greater own payoff translating into an earlier departure. The modal proposal in both the dictator and ultimatum games is an equal split of the waiting time. In the trust game, there is substantial trust and reciprocity. Overall, social preferences are evident in time allocation decisions. Received laboratory results from dictator, ultimatum, and trust games are robust to the change in reward medium, though there is some suggestive evidence that decisions are even more prosocial with respect to time than money.

Key words: dictator game, ultimatum game, trust game, time
JEL Classification: C70, C91, D63, D64.

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1 Introduction

In economic experiments, participants are typically rewarded with cash payments. The choice of money has clear advantages over potential alternatives such as course grades, food products, or store coupons. It can be safely assumed that the typical subject is non-satiated. Money can be allocated in positive and negative quantities. Indeed, utility is typically defined as equivalent to money income in many fields such as industrial organization and financial economics, and the use of money to incentivize thus arguably increases conformity with theoretical models. The use of monetary incentives readily allows a reward structure to be specified that conforms to the precepts of Smith (1982). The requirement that money be used as the reward medium is often stressed as an important feature distinguishing experimental economics from psychology.[1]

However, money is not the only scarce resource in the economy. Time is very scarce for many individuals. It is subject to strict and inflexible global constraints, and the typical economic agent must reallocate it very frequently. Given the importance of time in economic decision making, how people allocate time is of direct interest. Nevertheless, to our knowledge, time has not been employed as a medium of reward in economic experiments.[2]

In this paper, we consider the robustness of the empirical patterns, obtained in three well-known experimental economic paradigms, to the use of time as a reward medium. The three paradigms, the dictator, ultimatum, and trust games, are typically used to study the nature of social preferences. We consider two-player versions of the games here. When played for money,

[1] In rare instances, experimenters have used other means to create decisions in the domain of losses, such as bitter substances or pain (see for example Coursey et al. (1987), Ariely et al. (2003), Berns et al. (2007)). In each of these studies, however, positive monetary payments were also included to induce subjects to participate.

[2] We are aware of two other experimental studies in the social sciences that use time as a medium of reward. One study is about individual decisions under risk (Bruyneel et al. (2011)). Another study is on the ultimatum game (Berger et al. (2012)). Their design is close to ours, but their focus is the effect of anonymity on proposer offers. Their results show that offers are similar in a single and in a double blind procedure. They observe a modal proposal of a fifty-fifty split.

the games have the following structure. In a dictator game, two players have a certain amount of money to divide, and one of the two players, called the proposer, unilaterally specifies the division. The ultimatum game has a similar structure, except that the proposer's division can be rejected by the second player, who is called the responder. If the proposal is rejected, both players receive zero, while if it is accepted, the proposed allocation is implemented. In a trust game, a proposer has the opportunity to send some money to responder. The amount that responder receives is increased in magnitude, typically by a factor of three. The responder then has the opportunity to return any portion the resulting sum to the proposer.

Table 1 shows average behavior in these games when played for money. The data are drawn from three meta-analyses of experimental studies of the games.

Dictator game	
Average offer	28% of the endowment
Modal offer	0% of the endowment
Stake effects	Smaller relative offers (small effect)
Ultimatum game	
Average offer	40% of the endowment
Modal offer	50% of the endowment[3]
Stake effects	No effects of larger stakes
Trust game (proposers)	
Average offer	50% of the endowment
Modal offer	50% of the endowment
Stake effects	No effects of larger stakes[4]
Trust game (responders)	
Average offer	37% of the endowment
Modal offer	40% of the endowment
Stake effects	No effects of larger stakes

Table 1 Average and modal behavior in the dictator game (Engel (2011)), the ultimatum game (Oosterbeek et al. (2004)), and the trust game (Johnson and Mislin (2011)) under monetary incentives.

[3]Oosterbeek et al. (2004) do not report the mode of offers. The mode reported in this

The data from previous studies reveal the pervasiveness of social preferences. In the dictator game, an average of 28% of endowment is given away, illustrating a substantial degree of altruism on the part of the average individual. In the ultimatum game, the proposer offers on average 40% of her endowment. The difference between the amount offered in the dictator and ultimatum games can be attributed to the fear of rejection. An equal division is the modal offer, in contrast to the dictator game, in which zero is the modal offer. In the trust game, an average of 50% of endowment is transfered from proposer to responder, indicating the presence of altruism and trust. An average of 37% is returned, revealing the presence of some reciprocation. In general, stakes effects are weak, although offers in the dictator game, as a percentage of endowment, tend to decrease as the stakes increase.

In this paper, we report an experiment in which allocation decisions in the three games are made in terms of time rather than money. In each of our treatments, subjects make decisions that affect the time at which they and others can leave the laboratory and collect their participation fees. Waiting in the laboratory is purposely made a boring activity. Subjects are seated in a private room, and are not allowed to do anything during the time the are required to wait. For each of the three experiments, we use two stake levels: thirty-minute and sixty-minute total waiting times for the two players. The fixed show-up fee is €7 in the thirty minute sessions, and €14 in the sixty minute sessions.

In the dictator game, the proposer makes a decision about how to divide the applicable total waiting time in the lab between herself and an anonymous responder. The ultimatum game is similar, except that the receiving player can either accept or reject the proposer's division. Rejecting the proposal means that both players have to wait the maximum time, 30 or 60 minutes depending on the session, before they can collect their show-up fees.

table is from the two studies they analyse that were conducted in the Netherlands.

[4]In a recent study, Andersen et al. (2011) report stake effects in the ultimatum game. However, their design has the atypical feature that the subgame perfect equilibrium of the game was explained to the subjects in advance.

In the trust game, the default allocation is that both proposer and responder have to wait an equal amount of time. The proposer can elect to wait longer, and for each minute that the proposer waits longer, the responder can leave three minutes earlier. The responder can then choose to wait longer, and for each minute longer that she waits, the proposer can leave one minute earlier.

In the ultimatum game, the data show a strong consistency in behavior with a setting in which money is the medium of reward. The average offer is around forty percent of the endowment, and this offer is accepted in most cases. Similarly to the results with money, we do not observe stake effects. Behavior in our dictator games differs slightly from those played for money, with the dictator's allocation of time being more generous. The mode is to offer fifty percent of endowment. If the stakes increase, dictators do become less pro-social in our game. Finally, the trust game results are broadly consistent with previous studies using monetary payments, with some differences between the two stake levels that we use. In the low-stake, thirty-minute trust game, there is no correlation between offers made by proposers and responders. However, the low-stake treatment shows greater trust but less reciprocity than the higher-stake, sixty-minute treatment.

While our primary intent is to consider the robustness of the received results from prior experiments to a change in reward medium, the specific topic of social preferences with regard to time is of independent interest. In many situations, behaving pro-socially (anti-socially) can increase (decrease) others' disposable time. Consider, for example, two employees who are charged with keeping a security watch over a facility. If it is sufficient that only one pays attention at any given time to ensure that the facility stays secure, then they face a bargaining problem over the time that each employee is responsible for staying vigilant. Or consider two employees, each of whom is responsible for a project on his own. If one helps the other with his project, and the other reciprocates by helping the first employee, both projects can be completed more quickly, increasing the free time available for both individuals.

This paper is organized as follows. Section 2 presents the design of the

three experiments. In section 3, the data is analyzed. Section 4 compares our data to three well-known studies of the dictator game (Forsythe et al. (1994)), the ultimatum game (Güth et al. (1982)), and the trust game (Berg et al. (1995)). Lastly, section 5 concludes.

2 Experimental Design and Procedures

We implemented three games, the dictator game, ultimatum game and trust game. The instructions for each of the three games are given in the appendix. In each of the games, subjects made decisions on the allocation of waiting time, between themselves and one other player they were matched with. During the time they waited, subjects were not allowed to do anything. If they were caught violating this rule (such as reading, writing, surfing the Internet, etc.. . .), a ten minute penalty was imposed.[5]

The three games were each conducted under two different treatments, which were parameterized based on either a thirty-minute or a sixty-minute time span. Subjects received a show-up fee of €7 in the 30 minute treatment, and a show-up fee of €14 in the 60 minute treatment. If a subject left the experiment before her designated waiting time had expired, she forfeited her show-up fee.[6]

Table 2 below shows the number of observations in each treatment. Each observation consists of the decisions of one pair of players, and can be thought of as one play of the game. The games were all implemented under one-shot conditions. That is, each participant played only one game, and only played that game once. All data were gathered between March 2011 and January 2012.

2.1 The Dictator Game

In the dictator game sessions, one half of the subjects were randomly designated the role of proposer, and the other half the role of responder. Pro-

[5]This meant that the offending subject was required to wait in his cubicle for an additional ten minutes. The penalty was implemented once.

[6]This occurred for one subject.

Treatment	Obs.	Show-up fee
Dictator Game, 30 minutes (DG30)	31	7
Dictator Game, 60 minutes (DG60)	30	14
Ultimatum Game, 30 minutes (UG30)	30	7
Ultimatum Game, 60 minutes (UG60)	28	14
Trust Game, 30 minutes (TG30)	26	7
Trust Game, 60 minutes (TG60)	30	14

Table 2 Number of observations in the two treatments of each of the three games

posers and responders were paired randomly. Individuals were never informed of the identity of the player they were matched with. The proposers made a proposal about how long each member of the pair had to wait in her cubicle. The total waiting time of the two players was required to sum to either thirty or sixty minutes, depending on the treatment.

2.2 The Ultimatum Game

In the ultimatum game sessions, one half of the subjects were randomly assigned to be proposers, the other half were responders. A proposer had to make a proposal about how long each member of the pair had to wait in his or her cubicle. The responder then received the proposal and had the opportunity to accept or reject it. Acceptance of the proposal meant that the division of the proposer was carried out. A rejection meant that both the proposer and the responder had to wait for thirty or sixty minutes, depending on the treatment.

2.3 The Trust Game

In these sessions, each subject was randomly given the role of either proposer or responder, and each proposer was randomly paired with a responder. Both the proposer and the responder had to wait for either thirty or sixty minutes, depending on the treatment. The proposer could choose to stay longer than the baseline amount of time. In the TG30 treatment, proposers

could choose to stay longer up to a maximum of ten minutes longer. This maximum was twenty minutes in the TG60 treatment. For each minute that the proposer agreed to stay longer, the responder could leave three minutes earlier. The responder, after receiving the decision of the proposer she was matched with, could then choose to stay longer than her current requirement, which was equal to the baseline amount minus three times the gift she received from the proposer. For each minute that the responder chose to stay longer, the proposer could leave one minute earlier. A responder could not choose to return more minutes than he gained from the earlier transfer from the proposer.

2.4 Procedures

A session proceeded in the following manner. Subjects gathered in a common waiting room. Each session had between six and ten participants. At the start of the session, each subject was randomly allocated to a private cubicle, which was an isolated room of approximately 5 square meters (55 square feet). Once the experimenter had read the instructions out loud, the proposers filled in their forms, which accompanied the handout containing the instructions. All forms were then handed in, and the experimenter filled in the proposer's choices on the forms of the responders that they were matched with.

In the dictator game, the game ended at that point. In the ultimatum and trust games, the responders were required to fill in their response on their forms. Upon completing this, their forms were taken and shown to the proposers they were paired with. At this point in the experiment, the waiting time began. After a subject's waiting time had elapsed, the experimenter notified her that she was free to leave the session and gave her the session payment.

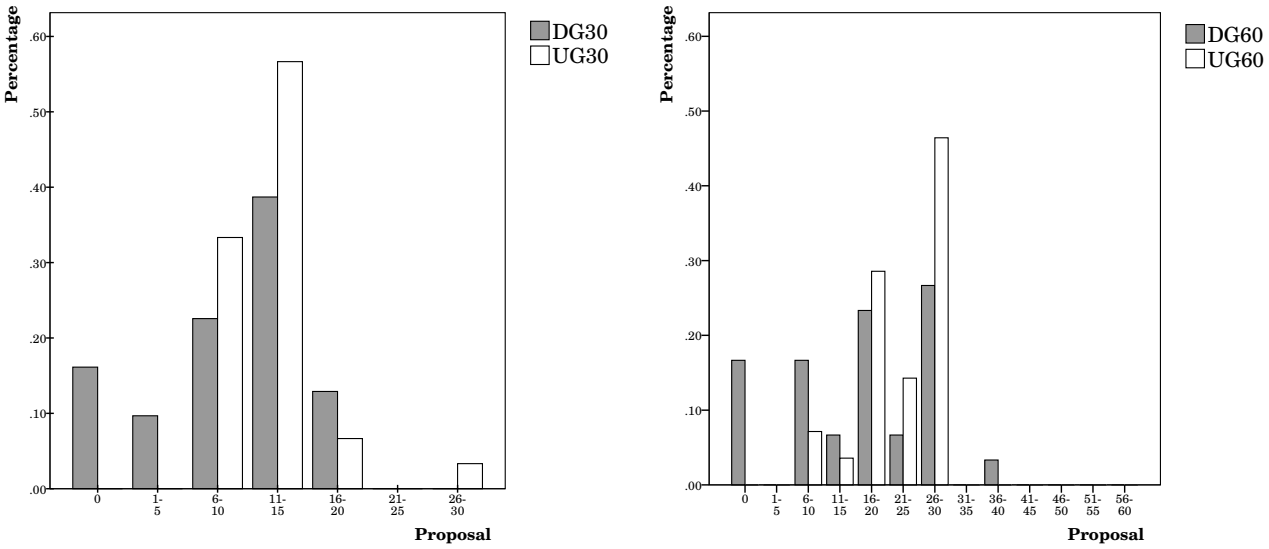
3 Results

3.1 The Dictator and Ultimatum Games

A summary of proposer behavior in these two games is given in Table 3 and Figure 1. The percentages indicated in the table are those offered to the responder.

	Obs.	Average (% of endowment)	Median (% of endowment)	Mode (% of endowment)
DG30	31	37	50	50
DG60	30	31	33	50
UG30	30	46	50	50
UG60	28	40	42	50

Table 3 Average, median, and mode of proposer's offers in the dictator (DG30 and DG60), and ultimatum games (UG30 and UG60)



(a) **(b)**

Figure 1 (a) Histogram of offers made in DG30 and UG30. **(b)** Histogram of offers in DG60 and UG60.

As can be seen from the table and figure, the proposers in the thirty

minute treatments offer a slightly larger percentage of their endowment than proposers in the sixty minute treatments. This difference is statistically significant in the dictator game, but not in the ultimatum game.

Result 1 Larger stakes lead to smaller relative offers in the dictator game. There are no stake effects in the ultimatum game.

Support for Result 1: Support for Result 1 is given by a Mann-Whitney test, taking each subject's decision as an independent observation. Observations are divided by the maximum gift possible, to make the two treatments comparable. Comparing DG30 with DG60, we find a marginally significant difference in minutes offered by the proposer ($N_1 = 31, N_2 = 30, p = 0.09$). This is a one-sided test (all other tests reported in this paper are two-sided tests), because our hypothesis of stake effects in the dictator game are based on the games played over money, where the typical finding is that offers go down as the stakes go up (see Table 1). Comparing UG30 with UG60, we find no significant difference between minutes offered ($N_1 = 30, N_2 = 28, p = 0.19$). ■

Unlike under monetary stakes, the median and mode of the endowment offered is identical between the 30-minute dictator and ultimatum games. The average percentage of the endowment offered is also similar, and we cannot reject the hypothesis of an equal percentage offered. However, a difference between offers in the games appears in the sixty minute treatments, where proposers in the UG60 treatment offer more than proposers in the DG60 treatment. Result 2 summarizes these findings.

Result 2 Offers are significantly smaller in DG60 than in UG60. However, there is no significant difference in the minutes the proposer offers between DG30 and UG30.

Support for Result 2: A Mann-Whitney test, taking a subject's decision as an independent observation, shows an insignificant difference in the thirty minute treatments between the two games ($N_1 = 31, N_2 = 30, p = 0.26$).

However, there is a significant difference between the two games in the sixty-minute conditions ($N_1 = 30, N_2 = 28, p = 0.05$). ■

3.2 The Trust Game

Table 4 provides summary statistics of behavior in the TG30 and TG60 treatments.

	Obs.	Average (% of endowment)	Median (% of endowment)	Mode (% of endowment)
TG30 (Proposers)	26	40	50	50
TG30 (Responder)	26	93	100	100
TG60 (Proposers)	30	30	25	25
TG60 (Responders)	30	142	200	200

Table 4 Summary of the data in the trust game treatments (TG30 and TG60.)

We first consider whether there is a stakes effect in the trust game. We find modest and borderline significant differences in the behavior of both proposers and responders. Proposers in TG30 offer a greater percentage of their endowment than proposers in TG60 do. When it comes to returning the investment made by proposers, responders give back a larger percentage of their endowment in TG60 than in TG30. This finding is summarized in Result 3.

Result 3 Proposers in TG30 offer relatively more of their endowment than proposers in TG60, but responders in TG30 return relatively less of their endowment than responders in TG60.

Support for Result 3: A Mann-Whitney test, taking each individual decision as an independent observation, establishes that the behavior of proposers is marginally significantly different between TG30 and TG60 ($N_1 = 26, N_2 = 30, p = 0.10$), with proposers offering a greater share under TG30. Responders in TG30 give back less of their endowment than responders in

TG60 ($N_1 = 19, N_2 = 24, p = 0.09$). ■

We now consider the presence of reciprocity, which we measure in two ways. The first is to consider whether there is a positive correlation between the number of minutes that proposers offer and the number that responders return. The second is to consider whether the percentage of the maximum feasible amount the responder returns correlates positively with the number of minutes that proposer transfers. If there is a linear and positive relationship between the amount sent and the amount returned, the first measure would be positive, and the second would be zero. This would be the case, for example, if responders returned exactly the amount sent to them, yielding a return of zero to proposer, or if they returned twice the amount sent, thereby equally dividing the gains resulting from the transfer. As described in result 4, we find that the first correlation is positive in TG60, but not in TG30, while the second correlation is insignificant in both treatments.

Result 4 Responders in TG60 behave reciprocally. The more minutes they receive, the more minutes they give back. There is no evidence of reciprocal behavior in TG30.

Support for Result 4: The Pearson's correlation coefficient between amount sent and amount returned is 0.18 in TG30 ($N = 19, p = 0.46$). This coefficient is 0.82 in TG60 ($N = 24, p = 0.01$). The Pearson's correlation coefficient between the amount sent and percentage of the maximum possible amount that is returned is -0.15 ($N = 19, p = 0.54$). In TG60, this coefficient is equal to 0.10 ($N = 24, p = 0.65$).[7] ■

Figure 2 illustrates the decision profiles of each pair of players in the trust game. Each dot in the graph shows the final outcome for a pair of subjects. The horizontal axis is the 'full payback line', it shows outcomes where the responder gave back the entire investment made by the proposer. The 45° line, the 'split total earnings line', corresponds to those outcomes

[7] Observations where the proposer offered zero are not included.

where the responder gives back such an amount of minutes that both parties have to wait equally long. The vertical lines represent the 'break even lines', consisting of those observations where the responder gives back the investment of the proposer, but keeps any additional minutes, yielding a zero net return to proposers. The line at 30 minutes corresponds to TG30 and the one at 60 minutes to TG60. The lines that slopes downward represent the 'no payback lines' for the two treatments. The one intersecting the horizontal axis at 40 applies to TG30, and the one intersecting at 80 applies to TG60. They indicate the decisions of responders who gave back no minutes to the proposer. Finally, the dots at the intersection of the four lines represent those pairs of subjects of whom the proposer offered zero minutes to the responder.

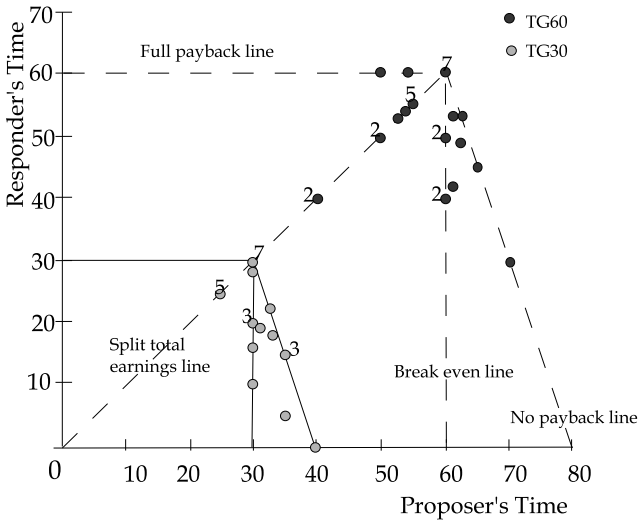


Figure 2 Distribution of final outcomes in the TG30 and TG60 treatments.

Figure 2 shows that fifty out of 56 subject pairs can be classified as adhering strictly to one of the four rules. This is an even greater percentage than that observed in the baseline no-history treatment in the seminal study of the trust game with monetary incentives (Berg et al. (1995)), in which the ratio is 18 out of 32. It may be that allocation decisions over time,

rather than money, are more likely to trigger the use of heuristics that focus on outcomes. TG60 has more pairs who can be classified as equal earnings splitters than TG30. On the other hand, TG30 has more pairs who can be found on the 'break even' line, or the 'no payback' line.

4 Comparison to prior experiments with monetary incentives

In this section, we compare the behavior in our experiment to the data from three well-known studies of the dictator game (by Forsythe et al. (1994), the ultimatum game (by Güth et al. (1982)) and the trust game (by Berg et al. (1995)), conducted using monetary incentives. Of course, any differences in behavior we find may be due to the medium of reward, but could also be due to differences in stakes used (perhaps \$10 in the year the previous study was conducted is not equivalent to either 30 or 60 minutes of time), or to any number of differences in the conditions under which our study and the previous ones were conducted. Nevertheless, a finding of no differences would suggest that the medium of reward does not exercise a large effect on behavior, since it would be unlikely that it would exert an effect that would be exactly offset by another set of variables. Our findings are reported as results 5 - 7.

Result 5 Proposers in the dictator game are more pro-social in our version played for time than in that for money in Forsythe et al. (1994).

Support for Result 5: The stakes in the dictator game played in Forsythe et al. (1994) are \$5. To construct one observation, we divide the amount of money given by a dictator by \$5. Average gifts are 22 percent of the endowment. A Mann-Whitney test shows that dictators in the DG30 experiment are more pro-social ($N_1 = 30, N_2 = 45, p < 0.01$). The same tests shows a marginally insignificant effect when the DG60 data are considered ($N_1 = 31, N_2 = 45, p = 0.11$). ■

Result 6 Proposers in the ultimatum game are somewhat more pro-social in our version played with time than that with money reported in Güth et al. (1982), if the amount of time to be divided is 30 minutes, but not when it is 60 minutes. Responders have equal rejection rates in the two studies.

Support for Result 6: The stakes used in the "naive" games in Güth et al. (1982) vary from DM 4 to DM 10. We divide each observation of a proposer by the amount of money for which the game is played. On average, a proposer offers 35 percent of her endowment. A Mann-Whitney test reveals that offers in the UG30 treatment are greater than offers made in Güth et al. (1982) ($N_1 = 30, N_2 = 21, p = 0.06$). Comparing UG60 with Güth et al. (1982), we find no differences in proposals ($N_1 = 28, N_2 = 21, p = 0.430$).

The data by Güth et al. (1982) show that two of the 21 responders (9.5%) reject the proposal. In UG30, four out of 30 responders (13.3%) reject the proposal, and in UG60 four out of 28 responders (14.2%) reject the proposal. A Mann-Whitney test shows no significant differences between the game played over money and UG30 ($N_1 = 21, N_2 = 30, p = 0.68$) and over money and UG60 ($N_1 = 21, N_2 = 28, p = 0.62$). ■

Result 7 Decisions by proposers and responders in the TG30 treatment are similar to those in Berg et al. (1995). In the TG60 treatment, proposers in the trust game are less pro-social if the game is played for time than money. Responders are more pro-social if the game is played for time than money.

Support for Result 7: The stakes used in Berg et al. (1995) are \$10. We divide each proposer offer by \$10 and we divide each responder offer by the amount received from the proposer. On average, proposers offered 52 percent in the game of Berg et al. (1995), and responders offered 90 percent. A Mann-Whitney test shows no differences in proposer behavior, comparing the TG30 treatment with Berg et al. (1995) ($N_1 = 26, N_2 = 32, p = 0.15$). A similar result holds for responder behavior ($N_1 = 19, N_2 = 30, p = 0.430$).

When comparing behavior of proposers in TG60 with those in Berg et al. (1995) we find a significant difference ($N_1 = 30, N_2 = 32, p < 0.01$). Similarly, a significant difference holds for responder's offers ($N_1 = 24, N_2 = 30, p = 0.03$). ■

5 Conclusion

Behavior in our games exhibits the same broad patterns that are present when they are played for money. Social preferences, in the forms of altruism and positive as well as negative reciprocity, are apparent. Subjects exhibit a considerable degree of trust. Average offers in our ultimatum game and dictator game experiments are much greater than zero. The average offer in the ultimatum game is greater than those in our dictator game experiments (though not significantly so for the thirty minute treatments). While we observe some stakes effects and some differences between our study and earlier studies of the same game with monetary incentives, these differences are modest and not systematic.

Our results show that the methodology of inducing incentives with monetary payments yield results that are robust to a change in the reward medium. In particular, experiments investigating social preferences using monetary incentives also capture the essence of how individuals make decisions regarding time in games with the same structure. The results suggest that the same could be true for other reward media. Once one accepts the assumption that the particular paradigms we have studied measure social preferences, then our results indicate that social preferences have some stability across reward media, at least in terms of average behavior.

Appendix A: Instructions of the Dictator Game

The instructions are shown for the DG30 treatment. Between parentheses the differences are shown with respect to the DG60 treatment.

Instructions for experiment

General instructions

This is an experiment in decision making. If you follow the instructions, you will earn 7 Euro (14 Euro) for your participation. You will be paid by bank transfer within the next 24 hours. The time at which you will have the right to leave the experiment may depend on your and other players' behavior. While the experiment is ongoing, you must stay in your own cubicle until you have the right to leave. While you are in your cubicle, you are not allowed to do anything. For example, you may not use a computer or telephone, and you may not read or listen to music. You must wait patiently.

In the experiment each player is a type A or a type B player. You are a type ... player. Each type A player will be matched with one type B player and vice versa.

Specific instructions for type A players

After the instructions are read and all players have filled in their forms, you and the player you are matched with must wait a total of 30 minutes (60 minutes). That is the number of minutes you wait, plus the number of minutes the other player waits, must total to 30 (60). You must make a proposal of how to divide the 30 minute (60 minute) wait among you.

For example:

- You can propose that you leave right way, and that the other player waits for 30 minutes (60 minutes).

- You can propose that you leave after 10 minutes (20 minutes), and that the other player leaves after 20 minutes (40 minutes).
- You can propose that you leave after 20 minutes (40 minutes), and that the other player leaves after 10 minutes (20 minutes).

You indicate your proposal here:

You wait _____ minutes
And player B waits _____ minutes

Specific Instructions for type B players

You will receive a form filled out by a player A indicating his or her proposal. You must stay as long as player A has proposed that you stay.

Appendix B: Instructions for the Ultimatum Game

The instructions are shown for the UG30 treatment. Between parentheses the differences are shown with respect to the UG60 treatment.

Instructions for experiment

General instructions

This is an experiment in decision making. If you follow the instructions, you will earn 7 Euro (14 Euro) for your participation. You will be paid by bank transfer within the next 24 hours. The time at which you will have the right to leave the experiment may depend on your and other players. While the experiment is ongoing, you must stay in your own cubicle until you have the right to leave. While you are in your cubicle, you are not allowed to do anything. For example, you may not use a computer or telephone, and you may not read or listen to music. You must wait patiently. In the experiment each player is a type A or a type B player. You are a type ... player. Each type A player will be matched with one type B player and vice versa.

Specific instructions for type A players

After the instructions are read and all players have filled in their forms, you and the player you are matched with must wait a total of 30 minutes (60 minutes). That is the number of minutes you wait, plus the number of minutes the other player waits, must total to 30 (60). You must make a proposal of how to divide the 30 minute (60 minute) wait among you.

For example:

- You can propose that you leave right way, and that the other player waits for 30 minutes (60 minutes).
- You can propose that you leave after 10 minutes (20 minutes), and

that the other player leaves after 20 minutes (40 minutes).

- You can propose that you leave after 20 minutes (40 minutes), and that the other player leaves after 10 minutes (20 minutes).

You indicate your proposal here:
You wait _____ minutes
And player B waits _____ minutes

Specific Instructions for type B players

You will receive a form filled out by a player A indicating player B's proposal. You may then accept or reject the proposal. If you accept the proposal, you agree to stay as long as player A has proposed. If you reject the proposal, you and player A must both stay for 30 minutes.

My decision is to accept/reject the proposal.

Appendix C: Instructions for the Trust Game

The instructions are shown for the UG30 treatment. Between parentheses the differences are shown with respect to the UG60 treatment.

Instructions for experiment

General instructions

This is an experiment in decision making. If you follow the instructions, you will earn 7 Euro (14 Euro) for your participation. You will be paid by bank transfer within the next 24 hours. The time at which you will have the right to leave the experiment may depend on your and other players' behavior. While the experiment is ongoing, you must stay in your own cubicle until you have the right to leave. While you are in your cubicle, you are not allowed to do anything. For example, you may not use a computer or telephone, and you may not read or listen to music. You must wait patiently. In the experiment each player is a type A or a type B player. You are a type ... player. Each type A player will be matched with one type B player and vice versa.

Specific instructions for type A players

After the instructions are read and all players have filled in their forms, you must wait in your cubicle for 30 minutes (60 minutes). Also player B you are matched with must wait for 30 minutes (60 minutes). You may, however agree to wait longer. For every minute that you agree to stay longer, the player B that you are matched with is permitted to leave three minutes earlier. You may agree to wait up to 10 minutes (20 minutes) longer. For example:

- If you do not agree to wait longer, you each must wait for 30 minutes (60 minutes).

- If you agree to wait 5 minutes (10 minutes) longer, you wait 35 minutes (70 minutes) and player B waits 15 minutes (30 minutes).
- If you agree to wait 10 minutes (20 minutes)longer, you wait 40 minutes (80 minutes) and player B can leave right away.

These are examples only; the actual decision is up to each person and can be different from the given examples above!

Specific instructions for type B players

You will receive a form filled out by a player A indicating how much time player A has agreed to stay longer, beyond the 30 minutes (60 minutes). You may then choose to stay longer, and allow the same player A to leave earlier. For every one minute that you stay longer, player A can leave one minute earlier. For example, suppose that player A has agreed to wait 5 minutes (10 minutes) longer, so that you are supposed to wait 15 minutes (30 minutes), and player A must wait 35 minutes (70 minutes).

- If you do not agree to wait longer, you wait 15 minutes (30 minutes) and player A waits 35 minutes (70 minutes).
- If you agree to wait 5 minutes (10 minutes) longer, you wait 20 minutes (40 minutes) and player A waits 30 minutes (60 minutes).
- If you agree to wait 10 minutes longer (20 minutes), you wait 25 minutes (50 minutes) and player A waits 25 minutes (50 minutes).
- If you agree to wait 15 minutes longer (30 minutes), you wait 30 minutes (60 minutes)and player A waits 20 minutes (40 minutes).

These are examples only; the actual decision is up to each person and can be different from the given examples above! The additional time that player B wait, cannot exceed the time reduction you received from player A's earlier decision to wait longer. For example, when player A has agreed to wait 5 minutes longer, player B may not wait more than an additional 15

minutes, because the time reduction player B received from player A waiting 5 more minutes, was 15 minutes. Another example; if player A did not agree to wait longer in his decision, player B cannot agree to wait longer when it is his turn to decide.

Decision form subject A

Line 1: You indicate how many additional minutes above 30 minutes you would like to wait here: ____ minutes (no more than 10 minutes (20 minutes))

Line 2: This means that you wait ____ minutes (= 30 + (= 60 +) amount from line 1)

Line 3: And player B waits ____ minutes (= 30 + (= 60 +) 3 x line 1)

While you are in your cubicle, you are not allowed to do anything. For example, you may not use a computer or telephone, and you may not read or listen to music. You must wait patiently.

Decision form subject B

Line 4: Indicate how long you have to wait based on A's decision: ____ minutes (amount from line 3)

Line 5: Indicate how many additional minutes you would like to wait here: ____ minutes (no more than 3 x line 1)

Line 6: This means that you wait a total of ____ minutes (= line 4 + line 5)

Line 7: And player A waits ____ minutes (= line 2 - line 5)
While you are in your cubicle, you are not allowed to do anything. For example, you may not use a computer or telephone, and you may not read or listen to music. You must wait patiently.

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